

# Phone notebooks as data on personal networks

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*This study assesses the nature of data on personal networks derived both from personal paper phone notebooks as well as from the mobile phone electronic notebook. It is illustrated by data on author's personal network between 1993 and 2000 and in 2002. The text emphasizes the subjective and biographical aspects of this data and suggests that studies based on mobile phone network data may contribute to the literature on the interaction between communication technology and sociability.*

## INTRODUCTION

When I entered the University of Helsinki in 1976, like all of my fellow Helsinki university freshmen, I got a calendar from the university's student union with an attached and non-removable section for writing down phone numbers. I thereafter faced the yearly task of transferring the preceding year's phone numbers of fellow students, friends, relatives and acquaintances to the note book section of the next years' calendar. Name by name, I had to reflect on the value and durability of the social ties in my personal network: Will it pay to transfer Anna's name and phone number to the new notebook? Do I really have anything in common with Antti any more? When was it I last met with Pertti? As a consequence of this annual task and my obsession with collecting the used note books, I have a personal archive of 19 calendar-phone notebooks with the lists of phone numbers and names of the alters of my personal network between 1976 and 2000.

In this methodological experiment I will mainly focus on my personal 'Phone Notebook Network' (PNN) data covering the eight years 1993-2000. In the second section I will first contextualize my story by giving some quantitative information about the evolution of my network. In the third section I try to assess the nature of PNN data compared to other means of collecting data on personal networks. In the fourth section I will evaluate the changes brought about by the increasing availability of mobile phones.

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My first aim is to show the usefulness of both PNN data and mobile phones as a source of data on personal networks. Second, I want to argue for the subjective and constructed nature of this seemingly innocent and ‘naturally occurring’ personal network data. I try to show through an actual example how the PNN data should be considered as a particular type of autobiography irrevocably embedded in the ego’s life history.

### EVOLUTION OF MY PERSONAL NETWORK 1993-2000<sup>2</sup>

The size of my personal network between 1976 and 2000 varied from 13 names in 1976 to a peak of almost 200 names in 1986. Upon my arrival in Helsinki in 1976 from my Northern Finnish hometown to study export marketing, I knew virtually nobody in the capital. This situation is reflected in the modest number of my phone network members. The 13 recorded names consisted mostly of relatives from my home town as well as freshmen at the university, two of whom were my school-mates and friends from the North. Like other migrants, I had to start building a new network out of the very few contacts I had in the capital.

The size of the network increased slowly up to my graduation and during my years as an assistant at the department of export marketing. My decision to quit the department and to start studying sociology in 1983 caused another rupture in the network and led to reconstruction of a new web of connections in a new (but still academic) milieu. The 1990s were marked by my work as a researcher at the Department of Sociology, getting married and having and raising kids.

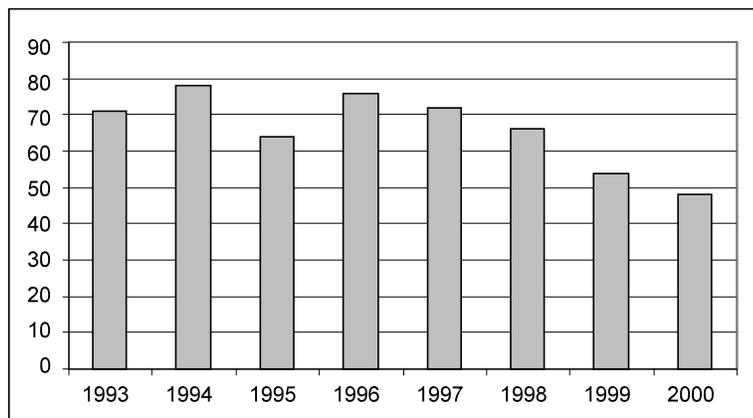


Figure 1. The evolution of the size of my phone network between 1993 and 2000.<sup>3</sup>

Understandably the bars in the figure hide an important turnover of individual alters. First, there were 149 different alters among the total of 529 notebook entries recorded during 1993-2000. Second, only 23 people were recorded both in 1993 and 2000. These 23 alters were all recorded without exception during the eight years and they accounted for 32 % of my network ties in 1993 but already

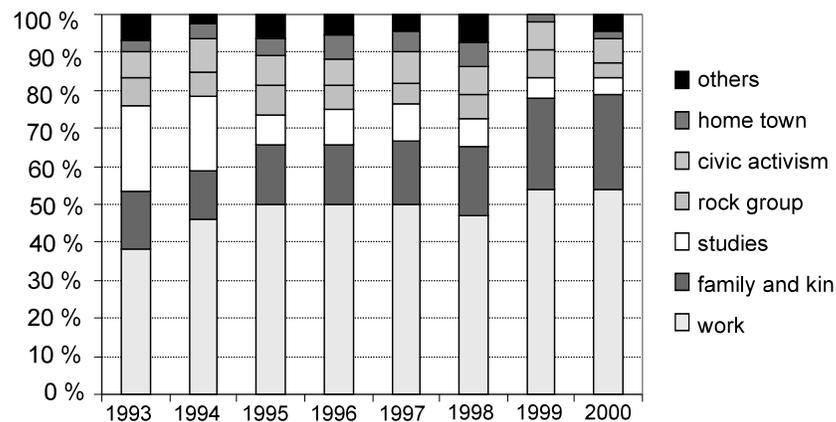
<sup>2</sup> The quantitative information presented in this sector is understandably not meant to be representative in any sense. It is presented as background material for further considerations in the following sections. For another example of analysing one’s own personal network, see Barth 1978).

<sup>3</sup> In preparing the network data for analysis, I transferred the names from the notebooks to Excel, removing double names of the same person, and the names of organizations. Where there was a particular person representing an organization s/he was included in the analysis. For the couples or families only the spouse who had been the origin of the contact (and who was usually the one with whom I was in touch) was registered, save my parents and parents-in-law who were all recorded. Otherwise the calendar data was recorded ‘as is’. That is, even if for one reason or another I had not registered the names of some close persons for couple of years, they were not added afterwards.

48 % in 2000. They can be regarded as my 'core network' (cf. Morgan et al. 1996) which has gradually gained importance at the expense of the more 'peripheral' parts of the network.

The slow decrease in size of the network is easily explained by the tight time budget of a working family with small children corroborating the general argument on the connection between personal networks and the ego's life events (cf. e.g. Families and Social Networks 1988, Wellman et al. 1997, Stueve and Gerson, 1977, Morgan & March, 1992).

Figure 2 shows the composition of my network ties during 1993-2000. In order to trace the evolution of the network, the coding of the type of alter was done by the origin of ties. Thus each alter was coded according to the way (or milieu) through which s/he had entered my network (e.g., work, family and kin, studies). This kind of coding based on the origin of ties is more useful for my purposes than the one based on the alters' present status (e.g., friend) since it pays special attention to ego's life course and to the evolution of the network through specific social contexts.



**Figure 2.** The composition of my phone network by the origin of ties 1993-2000.

Figures 1 and 2 reveal two obvious tendencies. First, the size of my network in the 1990s had been steadily decreasing, as a result of a more family and work-oriented life. As a consequence, the ties mediated by family, kin and work were increasingly accounting for the bulk of my network ties through the whole of the 1990s. While in 1993 work or kin -based relations together accounted for 54% of all recorded alters, this proportion reached 79% in 2000 (Figure 2).

Various hypotheses have been proposed about the questions of network evolution /maintenance. Why do some ties persist and others not? (cf. Suitor, Wellman and Morgan 1998, 4). The type or strength of the tie, homophily between ego and alter or the alter's position in the network structure have been proposed to explain the maintenance of a particular alter in the network. However, this kind of reasoning could be complemented with the search for an underlying principle or logic guiding the evolution of the whole personal network. As will be suggested in the next section, such a logic might have to do with the construction of ego's identity. While not denying the merits of structural explanations, from this 'subjective' angle the reason for the persistence of certain ties might be found in the simple fact that they are the main actors in the story ego wants to tell of his/her life.

Moreover, it is well known that the omission of one central alter may seriously distort the analysis of the network structure. In a similar vein the composition of my present-day network is a result of an evolutionary process in which some people have occupied a central role in introducing several alters

into the network. Hence the need for in-depth qualitative studies paying particular attention both to these ‘middlemen’ as well as to the temporal dimension of the personal networks.

### Reflections on the subjective nature of PNN data

At first glance, the PNN data seems both easy to obtain and ‘naturally occurring’ in the sense that they have been produced only for the personal uses of egos themselves, not for the use of social researchers. Many if not most people in industrialized countries do keep phone notebooks; they are easily available, may be collected cheaply by researchers and, at least in countries with high phone density, give an interesting perspective on an ego’s social life.

However, from the self-reflection on my own network I argue in this section that PNN data (like many other types of network data) is profoundly subjective and socially constructed. Out of the pool of all possible alters (“underlying network”, cf. Morgan, Neal and Carder, 1998, 16) only certain alters get recorded in the notebooks and others are excluded according to subjective but not completely haphazard criteria. I claim that it is precisely this constructed and subjective nature which renders this network data interesting.

The reason for the following observations was my own astonishment when browsing through the names I had recorded in my notebook during the eight years. Some names seemed to belong to my phone networks quite ‘naturally’, while the inclusion of others was difficult, even impossible to understand. Moreover, some of the people who ‘should have been’ there in my opinion were unaccountably missing.

In order to understand the process of recording the names in my notebook, I reconstructed in retrospect a list of the criteria of inclusion.<sup>4</sup> To the best of my knowledge I used these criteria unconsciously since the idea of participating in my own network research never occurred to me at the time. The following categories should not be considered as complete and mutually exclusive. Rather, they express the various aspects of social relationships which may exist as single stranded ties but often are combined into more or less multiplex relations (Mitchell 1969, 22).

1. Emotional closeness. This seemingly natural category contains my friends and selected adult members of my family and kin. Compared to imaginary data on my ‘significant others’ or ‘best friends’ acquired through name generators, my phone network would, however, overlap only partially. While my phone notebook network also contained weak ties, such as phone numbers exchanged with occasional fellow travelers on trips or for some other random reason without any intention to keep in touch on a more regular basis,<sup>5</sup> it did not necessarily cover all of my significant social ties. During some years I neither registered the phone number of my close relatives (since I knew them by heart), nor did I register my small children who did not yet have a phone.
2. Frequency of contact. The frequency of interaction was another one of the ‘obvious’ criteria for recording names and numbers in my phone book. Again the PNN data does not adequately reflect my daily interaction network. First, the phone numbers of some of the people whom I encountered on a regular basis were also learned by heart and thus not written down. Second, the numbers of the people encountered daily (such as my colleague next door at the department) were not necessarily written down since I could talk to them face-to-face.

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<sup>4</sup> One should not forget the criteria of *exclusion*. These were mostly negations of the inclusion criteria but were sometimes dictated by very practical questions. To save notebook space (and my hand) the names of whole families were often written down under one name only.

<sup>5</sup> At the same time it is clear that some of these ties may either form durable ones or function as ‘weak ties’ to other social milieus.

3. Instrumentality. My phone book also contained phone numbers of people whom I needed only for some clearly limited task (such as learning Russian, or purchasing motorcycle parts). These names were not well connected to the rest of my network and often disappeared after couple of years.
4. Practical reasons. This category contains many numbers of my close Russian friends and colleagues which were hard to get through long distance information services.<sup>6</sup> These people, whom I met couple of times a year, often survived through the whole 1993-2000 period in my notebook.
5. Hazard. This category includes the people met by chance, such as traveling companions encountered on a trip abroad. Even behind these seemingly haphazard social ties one may find a certain order, since the exchange of phone numbers with these alters was often the consequence of a discussion already testifying to a shared discursive world or common interest.
6. Identity ties. This category includes quite a lot of people from my past, with different backgrounds and origins. With some of these I had very close relations (in fact, many are still my friends) and with others I was keeping in touch more or less regularly. What was puzzling were those alters for whom I recall having asked year after year, 'Do I see them any more?' 'Does it pay to write them down?' And still I wrote them down though we had no contact nor would I have called these ties particularly close ones.

From the point of view of this text, the last type of alter in this category is the most interesting one since, by maintaining these people in my network, I was in retrospect trying to reconstruct myself as 'an activist' (by maintaining alters from a radical group of civic activists), 'rock-musician' (my mates from a rock group), or the like. My doubts about keeping these names in my notebook lately reveal that the tension between the 'identity' and 'interaction' networks was becoming too visible. An academic middle-class family life with small kids does not in the end go too well with intense activism and rock life. In short, this type of alter in this category shows how I was involved – by transferring these names to my calendar year after year - in a heavy 'identity work' to keep up a certain image of myself.

It is the category of the identity ties especially which reveals the subjective and constructed nature of the PNN data. This data cannot be considered simply as a 'fact' corresponding to my web of actual contacts 'out there' in the real world, but rather as unconsciously constructed image of myself. Since a personal network is a cumulative result of one's life-course, the network data – whether naturally occurring or otherwise obtained - is irrevocably embedded in ego's biography. Consequently, each informant in a network study is involved in this kind of 'identity work' through recalling some people and forgetting others.

Finally, beside the seemingly obvious alters such as friends, relatives and close colleagues, my PNN data contained another interesting category, namely, the completely forgotten people, 'zombies'. Some of these were simply impossible to recall, but my efforts also revealed the working mechanisms of the memory in a very practical manner. Trying desperately to recall a particular person, I browsed through the list of the names of other alters registered in the phone notebook in the same year. One name led to another which was in turn associated with a third, and so on. Piece by piece my memory reconstructed a network pattern and sometimes resulted in a 'hit', but only after having rebuilt the context for this particular 'zombie'. This context might be a social circle, a place or an event, but the decisive clue was sometimes foreign handwriting or the particular ink with which the name was written down in the notebook. Thus it became very clear that to 'forget' somebody means to 'de-contextualize' him/her).<sup>7</sup>

<sup>6</sup> Today St. Petersburg still lacks a phone directory with the phone numbers of individual citizens.

<sup>7</sup> The first implication is a need to combine psychological studies on memory with research on networks. Moreover, it is (continued...)

In sum, these observations seem to render the PNN data unreliable from the point of view of analysing the network structure, since leaving out only one central alter might distort the whole network, not to mention the difficulties in reliable reconstruction of interconnections between alters by the ego. Neither can PNN data be called 'objective', and its validity in terms of covering either significant others or interaction networks may be questioned for the reasons mentioned above.

However, for a researcher emphasizing the subjectively constructed nature of the personal network and its relation to an ego's identity building, naturally occurring and easily available PNN data seems to offer interesting opportunities. It is this subjectivity and self-construction - and the rules governing it - which suggest room for combining network studies with biographical analysis as well as with comparative studies, since these rules are probably culturally variable classifications.<sup>8</sup> Looking at personal networks from this angle might pave the way for incorporating culture in general (Emirbayer and Goodwin 1994) and the concepts of narrativity and identity in particular (Somers 1994) into the analysis of social networks.

Moreover, the heterogeneous nature of PNN data, including both significant others, interaction networks and weak ties may be seen not only as a weakness but an opportunity to study the of ego's view on totality of his/her different social ties (cf. Gribaudo 1998, Lonkila 1999). If we accept the claim that the role or meaning of a particular social tie in one's personal network can only be understood in relation to all the ego's various social ties, the PNN data may offer a necessarily partial and subjective approximation for this. Second, such data may help in the search for a unifying logic - such as the ordering work of an ego's habitus - creating coherence in the chaos of the ego's social ties.

### **Comparing PNN data with data obtained from the mobile phone (MP) notebooks**

Many of the shortcomings of the PNN data may be avoided by turning to the data obtained from an ego's mobile phone. Having purchased a mobile phone (a used Nokia 3210) in 2001, I still went on keeping my paper notebook. Quite soon the double work of recording numbers and names in two places appeared to be too much and I gave up the notebook. Consequently, the chance of tracing the annual evolution of my network through paper phone notebooks had come to an end.

Compared to many other Finns I was a latecomer in the world of mobile telecommunications, since in 1999 80 % of Finnish households had a mobile phone (Mäenpää 2001).<sup>9</sup> My use of an MP - as is the case with most technological innovations - was largely learned through the ties of my personal network.<sup>10</sup> By observing more and more of my friends and colleagues purchasing an MP, I too started to appreciate its advantages (while being quite innocent of the disadvantages). Much as steamboats replaced sailing boats the MP notebook replaced my paper phone notebook as a more effective and easy means of storing and retrieving the phone numbers of my alters (and ultimately phoning or sending a SMS message to them). Simultaneously, my criteria for registering alters in the MP memory were loosened up, with the sole limitation of the memory space.

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<sup>7</sup>(...continued)

suggested that the name generators and/or prompts and clues during the recall interview should pay particular attention to the social or other contexts or milieus where the ties get formed. See Brewer (2000) for a more thorough discussion on recalling/forgetting alters.

<sup>8</sup> For example, the pilot interviews carried out by my Russian colleague seem to suggest different status and practices related to PNN data in Russian culture. (Gladarev 2000).

<sup>9</sup> In younger age groups in 2001 the proportions of mobile phone owners were already close to 100 % (see: [http://www.tilastokeskus.fi/tk/yr/tietoyhteiskunta/matkapuhelin\\_oma\\_kuvasivu.html](http://www.tilastokeskus.fi/tk/yr/tietoyhteiskunta/matkapuhelin_oma_kuvasivu.html))

<sup>10</sup> I owe this point to Pasi Mäenpää.

In October 2002, my MP notebook contained 107 numbers altogether. After the elimination of numbers of institutions etc. (see preceding section on data storage), my mobile phone network comprised 73 alters.<sup>11</sup> It is notable that of the 34 'extra numbers', many were those of the same people who were now recorded not only by home and office numbers but also by mobile phone. Since most people are more easily contacted at their MP numbers, the tendency is clearly towards fixed phones being replaced by MPs.<sup>12</sup>

What was lost in terms of tracking the annual network evolution was regained in the new opportunity for network research through the use of MP notebook data. Since recording numbers with an MP is easier than digging up your paper phonebook and looking for pen or pencil, the weak ties, such as an acquaintance encountered in the street, get registered more often. But all of the strong ties (who have a phone) also get recorded on the MP because of the ease of phoning through 'short-cut dialing'. The numbers known by heart which were not included in the paper phone notebook did get included in my MP notebook.

Another specifically MP-related criterion for recording names in my MP notebook was the widespread use of SMS messages in Finland. I could keep a phone number in my MP memory in order to send a relatively cheap SMS message to an acquaintance, even though I would not have called him/her on any occasion.

There is more to the use of an MP, however, than the changing nature of the recorded data on personal networks. According to recent literature, mobile phones may also have an impact on the very nature of our sociability (e.g. Mäenpää 2001, Smoreda and Thomas, 2001, Réseaux 2002).<sup>13</sup> This influence is a two-way street since people may use technological innovations in a way not foreseen by the producers. In the words of a Finnish researcher, "Users have both been completely ignorant of the possibilities offered to them as well as immensely enthusiastic about something which nobody could imagine" (Immonen 2002).<sup>14</sup>

The commercial aspects may also have an important effect both on 'mobile sociability' (and consequently on the nature of MP notebook data on personal networks). The charge on MP calls between different Finnish operators, for example, differs considerably: a MP call to another operator's MP may currently cost more than 200 % of the charge within the same operator. Thus the question "should I call her" may at present imply two additional considerations "should I call her MP or fixed phone?" and "what operator is she on?"<sup>15</sup> There is thus clearly a need for further studies on the relation between the use of MP and the sociability of daily life – and I claim that the data on personal networks collected in MP notebooks may add an important aspect to such studies.

In a recent Finnish study (probably the first network study collecting personal network data from MP notebooks) Elina Kuitto interviewed 30 high school students in the fall of 2001, constructing their

<sup>11</sup> In a network seminar in 2000 I asked eight Finnish students to count the numbers in their mobile phone memory. The average size of their MP networks was 54, with a range from 18 to 112. In a study of the MP networks of Finnish high school students carried out during 2001, the MP network size was 51 for boys (N=10) and 54 for girls (N=20). (Kuitto 2002).

<sup>12</sup> Of the 73 alters on my MP network in 2002, 45 (62%) had a mobile phone. Finnish students in our seminar in 2002 advised me that nowadays it is rare for students to have a fixed phone at all.

<sup>13</sup> In this sense, the study on the MP is analogous to studies of the Internet. It should not be forgotten, however, that paper is also a highly technological innovation with its own impact on human activity.

<sup>14</sup> An example is the unpredicted popularity of SMS messages in Finland.

<sup>15</sup> The special discounts offered for family members (or friendship circles) who are customers of the same operator may have the effect of constraining / enabling interactions within this kind of 'virtual circle'.

personal networks from the name lists retrieved from their MP notebooks. Only two of Kuitto's informants said that their personal 'mobile phone notebook network' did not cover most of their significant social contacts. In general, Kuitto concludes that the mobile phone network is a quite valid and easy way of collecting data on personal networks. (Kuitto 2002).

## Conclusions

The increasing availability of mobile phones offers new opportunities for obtaining data on personal networks. Compared to PNN data, the mobile phone notebook networks (MPNN) seem to be more valid data in the sense that they cover more accurately both the weak and strong ties, the interaction network and the network of significant others.<sup>16</sup> In addition, the MP usually offers an indicator of the frequency of interaction between ego and alters, since the standard models enables easy retrieval of the 10-20 last received and/or sent phone calls as well as an archive of SMS messages. Some models also contain a log of phone calls, SMS messages and e-mails sent to an MP: for each kind of contact, the log stores information not only about the alter in question but the direction of contact (incoming /outgoing), the duration of the calls and the date and time of the contact. MP network data (recently also visual data and photographs taken by MP cameras) may also be easily transferred from the MP's memory card to the computer for further analysis.

The MPNN data may open up new perspectives on the ways of communicating and interacting in a 'mobile culture'. As in internet studies, the state of research on mobile phones has been lagging behind the development of the field (Wellman 2001). Recent studies (e.g. Mäenpää 2001) have already suggested that some of the assumptions of the social consequences of MP use, such as diminishing need for face-to-face contacts, may be wrong. Network research based on the MPNN data could investigate the emerging 'mobile sociability' on its own home ground.

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